Check your understanding

17. Why can't we solve for the equation of the plane through three colinear points?

    (a) Such a plane does not exist.

    (b) There are infinitely many such planes.

18. Which of the following *cannot* arise as the intersection of two planes in three-dimensional space?

    (a) The empty set.

    (b) A point.

    (c) A line.

    (d) A plane.

Answers: 17 (b), 18 (b).

Explanation for 18: The intersection is usually a line, in which case a tangent vector to the line is obtained as the cross product of normal vectors to the two planes. The intersection can also be the empty set, when the two planes are parallel, or a plane, when the two planes are equal.